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# ACTIVE LEARNING AND THE DEVELOPMENT OF STUDENTS' LEARNING INTEREST: A QUALITATIVE CASE STUDY IN AN INDONESIAN ELEMENTARY SCHOOL ACTIVE LEARNING AND THE DEVELOPMENT OF STUDENTS' LEARNING INTEREST: A QUALITATIVE CASE STUDY IN AN INDONESIAN ELEMENTARY SCHOOL

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**ABSTRACT**

Students' learning interest plays an important role in classroom engagement and participation. This study explores how active learning is implemented and how it contributes to the development of students' learning interest in Grade 4 at SD Negeri 011 Bangun Purba, Indonesia. A qualitative case study design was employed. Data were collected through classroom observations, in-depth interviews with one teacher and three students, and learning documents. The data were analyzed thematically with the assistance of NVivo 12. The findings show that active learning was implemented through three interrelated practices: creating participatory learning, providing varied learning activities and media, and developing two-way interactions that encouraged students to ask questions, respond, discuss, and receive feedback. Students perceived these practices as enjoyable and meaningful learning experiences that facilitated their understanding of learning materials and increased their confidence to participate. The implementation was supported by teachers' varied instructional strategies and students' enthusiasm and cooperation, while non-conducive classroom conditions and differences in learning abilities presented challenges. Overall, active learning contributed to the development of students' learning interest through increased enthusiasm, engagement, and willingness to understand learning materials.

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## 1. INTRODUCTION

Learning interest is an important dimension of students' learning experiences because it is associated with their attention, participation, and willingness to engage with learning activities. At the elementary school level, learning interest is particularly important because students are still developing their cognitive, social, and emotional capacities and tend to respond positively to learning experiences that are meaningful and connected to their immediate environment. Nurhasanah and Sobandi (2021) identify learning interest as an important determinant of learning success among elementary school students, while Liu et al. (2023) demonstrate that learning interest is associated with students' academic development over time. From a developmental perspective, elementary students learn through active engagement with their environment, making the quality of classroom experiences an important consideration in fostering their interest in learning (Piaget, 1972; Darling-Hammond et al., 2020).

Active learning provides one possible pedagogical approach for creating such experiences. Rather than positioning students as passive recipients of information, active learning involves students in meaningful activities that require them to think about and engage with what they are learning (Bonwell & Eison, 1991; Prince, 2004). Active learning can take different forms, including discussion, cooperative learning, inquiry, problem-based learning, project-based learning, and discovery learning. Although these approaches differ in their procedures, they share an emphasis on students' active participation in constructing knowledge and interacting with learning environments (Chi & Wylie, 2014; Fiorella & Mayer, 2016). This orientation is also consistent with constructivist perspectives, which emphasize learning through experience, social interaction, and the active construction of meaning (Fosnot, 2013; Piaget, 1972; Vygotsky, 1978).

The theoretical relevance of active learning to students' learning interest can be understood through the experiences it creates during classroom learning. Dewey (1938) emphasized the importance of experience in education, while Bruner (1961a, 1961b) highlighted learning through discovery and the active organization of knowledge. From a sociocultural perspective, interaction with teachers and peers can also provide important opportunities for students to develop understanding and participate in learning (Vygotsky, 1978). Thus, active learning is not simply characterized by the amount of activity undertaken by students; rather, its significance lies in whether those activities encourage meaningful cognitive, social, and reflective engagement (Bonwell & Eison, 1991; Chi & Wylie, 2014; Fiorella & Mayer, 2016).

Previous empirical research has provided substantial evidence concerning the value of active learning. Prince (2004), through a review of research on active, collaborative, cooperative, and problem-based learning, found broad support for several core elements of active learning. Similarly, Freeman et al. (2014), through a meta-analysis of 225 studies, reported positive effects of active learning on student performance compared with traditional lecturing. Michael (2006) also argued that evidence supporting active learning can be identified across different forms of instructional practice. More specifically, Munna and Kalam (2021) reported that active learning strategies can strengthen student engagement, while Chi and Wylie (2014) explained that different levels of cognitive engagement distinguish passive participation from more constructive and interactive forms of learning. These findings suggest that student engagement is an important dimension through which active learning becomes meaningful.

Research in primary education has also increasingly examined student-centered and active approaches. Che Mat and Jamaludin (2024), through a systematic literature review, examined practices and applications of student-centered teaching and learning in primary schools. Li and Ren (2024) similarly reviewed active learning strategies and student engagement in primary education. Other studies included in the thesis have examined specific active learning approaches, such as project-based learning and discovery learning, in elementary school contexts (Maharani et al., 2025; Rudin et al., 2021). Nugroho et al. (2025) further examined student engagement in project-based learning within the Merdeka Curriculum, while Tasya (2024) reviewed the implementation of active learning strategies in relation to elementary students' learning engagement. Collectively, these studies indicate growing scholarly attention to active and student-centered learning in elementary education.

However, the existing literature leaves an important gap. First, much of the literature has examined the effectiveness of particular instructional models or strategies, such as project-based learning, discovery learning, problem-based learning, or other student-centered approaches (Maharani et al., 2025; Rudin et al., 2021; Tasya, 2024). Such studies are useful for identifying whether particular approaches are associated with learning outcomes or engagement, but they provide less insight into how active learning is constructed through the everyday practices of teachers and students. Second, systematic reviews have synthesized evidence concerning student-centered learning and student engagement (Che Mat & Jamaludin, 2024; Li & Ren, 2024), yet synthesis at this level may provide limited understanding of the contextual processes through which students experience active learning in a particular elementary classroom. Third, existing research has frequently emphasized student engagement or academic achievement as outcomes (Freeman et al., 2014; Munna & Kalam, 2021; Nugroho et al., 2025), whereas the development of learning interest as an experiential and motivational process remains less explicitly explored. This distinction is important because engagement refers to students' involvement in learning activities, whereas learning interest concerns their developing attention, attraction, and willingness toward learning experiences (Fredricks et al., 2023; Nurhasanah & Sobandi, 2021; Schiefele et al., 1992).

The gap is therefore not simply the absence of studies on active learning or learning interest. Rather, there is a need for research that explains how classroom practices associated with active learning are experienced by students and how those experiences may contribute to the development of learning interest. The distinction is particularly important in elementary education because active learning may take different forms depending on students' developmental characteristics, teacher practices, classroom conditions, and available learning resources (Darling-Hammond et al., 2020; Piaget, 1972). In this context, examining active learning as a classroom process rather than as a fixed instructional model can provide a more nuanced understanding of why students become more interested and willing to participate in learning.

Based on this gap, the present study investigates the implementation of active learning in Grade 4 at SD Negeri 011 Bangun Purba, Indonesia. The study examines how teachers create participatory learning environments, provide varied learning experiences, and establish interactions that encourage students to participate in classroom activities. It also explores students' experiences and responses to active learning, the factors that support and constrain its implementation, and its contribution to the development of students' learning interest. By using a qualitative case study, this research seeks to move beyond the question of whether active learning is effective and instead examine how active learning operates as a classroom experience through which students' participation, understanding, confidence, and interest in learning may develop.

## 2. METHODS

This study employed a qualitative case study design to explore the implementation of active learning and its contribution to the development of students' learning interest in a natural classroom context. A qualitative approach was considered appropriate because the study sought to understand teachers' practices, students' experiences, classroom interactions, and contextual factors rather than statistically test causal relationships. Qualitative research enables researchers to explore how individuals interpret and experience a phenomenon within its natural setting (Creswell & Creswell, 2018; Creswell & Poth, 2018). A case study design was selected because it allows an in-depth examination of a contemporary phenomenon within its real-life context, particularly when the boundaries between the phenomenon and its context are not clearly separated (Yin, 2018).

The case examined in this study was the implementation of active learning in Grade 4 at SD Negeri 011 Bangun Purba, Indonesia. The case was selected based on initial observations indicating that the teacher had implemented various learning activities that emphasized student participation and interaction. The study was conducted from June to July 2026.

Participants were selected using purposive sampling, whereby informants were chosen based on their relevance to and understanding of the phenomenon under investigation (Patton, 2015). The primary informant was the Grade 4 classroom teacher, who was directly responsible for planning and implementing classroom learning. Three Grade 4 students were also involved as supporting informants to provide information about their experiences and responses to active learning activities.

The study used both primary and secondary data. Primary data consisted of information concerning the implementation of active learning, teacher strategies for involving students, students' learning experiences and responses, classroom interactions, and factors supporting or constraining implementation. Secondary data included teaching modules and learning materials, curriculum documents, photographs of classroom activities, student learning records, and other relevant school documents.

Data were collected through classroom observation, in-depth interviews, and documentation. Observation was used to examine the actual implementation of active learning, including teacher–student interaction, student participation, learning activities, use of learning media, and classroom conditions. In-depth interviews were conducted with the teacher and selected students to explore their experiences, perceptions, and responses to active learning. Documentation was used to complement and corroborate information obtained through observations and interviews. The combination of these three sources enabled data triangulation and provided a more comprehensive understanding of the phenomenon.

The collected data were analyzed thematically. The analysis involved data condensation, data display, and conclusion drawing, following the qualitative data analysis framework of Miles et al. (2014). Interview and observation data were systematically coded to identify recurring patterns related to the implementation of active learning, students' experiences and responses, supporting and inhibiting factors, and the contribution of active learning to students' learning interest. NVivo 12 was used to assist the coding and organization of qualitative data. Thematic analysis was conducted by identifying meaningful codes, grouping related codes into categories, and developing broader themes that represented patterns across the data. Thematic analysis provides a systematic approach for identifying, organizing, and interpreting patterns within qualitative data (Nowell et al., 2017). Findings from observations, interviews, and documents were compared to strengthen the interpretation and consistency of the emerging themes.

The trustworthiness of the findings was strengthened through triangulation of data sources and data collection techniques. Information obtained from teacher interviews was compared with students' accounts, classroom observations, and relevant documentation. This process was used to reduce dependence on a single source of information and to ensure that the interpretation reflected the classroom practices observed in the field. The study also maintained the confidentiality of participants' identities and obtained informed consent before data collection. The use of multiple sources and systematic qualitative procedures is consistent with strategies for establishing credibility and trustworthiness in qualitative research (Lincoln & Guba, 1985; Shenton, 2004).

## 3. FINDINGS

The findings were derived from data collected through classroom observations, in-depth interviews, and learning documentation at SD Negeri 011 Bangun Purba. The primary informant was the Grade 4 classroom teacher (G1), who was directly responsible for planning and implementing classroom learning. Three Grade 4 students (S1, S2, and S3) were included as supporting informants to provide perspectives on their experiences and responses to the learning activities. The use of multiple informants and data sources enabled the researchers to compare teachers' accounts with students' experiences and observed classroom practices.

Thematic analysis of the data generated four broad themes. The first theme concerns the implementation of active learning, particularly the ways in which the teacher created participatory learning, provided varied learning activities and media, and established interactive communication. The second theme concerns students' experiences and responses, which included enjoyment of learning, easier understanding of learning materials, and greater confidence to participate. The third theme concerns supporting and inhibiting factors, including teacher flexibility and student cooperation as supporting conditions, as well as classroom noise and differences in students' learning abilities as challenges. The fourth theme concerns the contribution of active learning to the development of learning interest, reflected in students' enthusiasm, active involvement, and willingness to understand learning materials. These themes emerged through the comparison and triangulation of teacher interviews, student interviews, observations, and documentation.

**Table 1. Overview of the Thematic Findings**

| Theme | Key findings | Main sources |
|---|---|---|
| Implementation of active learning | Participatory learning; varied learning activities and media; interactive teacher–student communication | G1, S1–S3, observations, documentation |
| Students' experiences and responses | Enjoyable learning; easier understanding of learning materials; increased confidence to participate | S1–S3, observations |
| Supporting and inhibiting factors | Teacher flexibility; student enthusiasm and cooperation; classroom noise; differences in learning abilities | G1, S1–S3, observations, documentation |
| Contribution to learning interest | Increased enthusiasm; greater participation; stronger desire to understand learning materials | G1, S1–S3, observations, documentation |

*Note. G1 = Grade 4 teacher; S1–S3 = student informants.*

The four themes provide the structure for the findings presented below. Rather than treating active learning as a single instructional technique, the findings show how it was

enacted through interconnected classroom practices and how these practices were experienced by students. The presentation therefore moves from what the teacher did, to how students experienced it, the conditions that shaped its implementation, and finally how these experiences were associated with the development of learning interest.

### *3.1 Active Learning Was Implemented Through Participation, Varied Activities, and Interaction*

The first finding shows that active learning was not implemented as a single instructional model. Instead, it emerged through three interconnected classroom practices: participatory learning, varied learning activities and media, and two-way teacher–student interaction. The teacher deliberately organized students into small groups to encourage discussion and cooperation. Rather than relying primarily on teacher explanations, students were given opportunities to express opinions, discuss problems, ask questions, and work together. The teacher explained:

> *"I deliberately divide the students into small groups so they can discuss with each other. If they only listen to my explanation, usually only a few students are active. But when they work in groups, almost all of them participate and help each other." (G1)*

The implementation was also characterized by variation in learning activities and media. The teacher used group work, simple practical activities, educational games, pictures, videos, and other learning media. The teacher explained that elementary students tended to understand lessons more easily when they could see, try, or experience something directly:

> *"Elementary students understand lessons more quickly when they see, try, or do something themselves. That is why I usually use pictures, videos, or simple practical activities." (G1)*

The third characteristic was two-way interaction. Students were encouraged to ask questions and respond to the teacher, while peers also became sources of assistance during learning. Thus, interaction occurred both vertically between teacher and students and horizontally among students. Overall, the data indicate that active learning in this classroom was expressed through opportunities for students to participate, experience, communicate, and collaborate, rather than through the application of one standardized teaching model.

### *3.2 Students Experienced Active Learning as Enjoyable, Understandable, and Confidence-Building*

The second finding concerns how students experienced the learning process. All three student informants described active learning positively, particularly activities involving group work, discussion, practice, games, and learning media. Students associated these activities with greater enjoyment and reduced boredom. For example, S1 stated:

> *"Yes, Ma'am. I enjoy it because learning is more fun. There is group learning, learning while playing, and sometimes simple experiments, so I don't get bored quickly." (S1)*

Students also associated collaborative learning with better understanding. S2 explained:

> *"I enjoy it because I can learn and discuss with my friends. When I study alone it can sometimes be difficult, but when I study with friends it is easier to understand the lesson." (S2)*

Similarly, S3 emphasized the role of discussion and practice:

> *"I often ask the teacher if there is a lesson I don't understand. I also ask my friends. The activities I like most are discussion and practice because I understand the lesson more easily." (S3)*

The students also reported greater confidence in participating. They were willing to ask questions, answer the teacher's questions, discuss ideas, and seek help from peers. S1 explained:

> *"I have asked the teacher questions. I am also brave enough to answer the teacher's questions... If there is a lesson I don't understand, I ask the teacher, and then I also ask my friends so that I can understand it more easily." (S1)*

These accounts indicate that students' experiences involved more than enjoyment. Active learning was experienced as a process that made learning more enjoyable, easier to understand, and safer for participation.

### *3.3 Active Learning Was Supported by Teacher Flexibility and Student Cooperation but Constrained by Classroom Conditions*

The third finding concerns the conditions that shaped implementation. The main supporting factors were variation in the teacher's instructional strategies and students' enthusiasm and cooperation. The main constraints were less conducive classroom conditions and differences in students' learning abilities. Teacher flexibility enabled different activities to be combined according to the characteristics of the material and students. Students' willingness to cooperate also facilitated group discussion and collaborative tasks. However, active participation sometimes created classroom-management challenges.

The teacher described this tension:

*"When the children are discussing or practicing, the classroom does become noisier. The challenge is how to keep them active without disturbing other groups or making the class difficult to control." (G1)*

Students similarly recognized the problem. S1 stated:

"I like group learning, but sometimes the classroom is too noisy. When everyone talks at the same time, it becomes difficult to hear the teacher or friends who are speaking." (S1)

Thus, the findings reveal a paradox within active learning: the same interaction that increases participation can also create classroom-management difficulties. Active learning therefore requires not only opportunities for participation but also teacher regulation of interaction and attention to differences among students.

### *3.4 Active Learning Was Associated with the Development of Learning Interest*

The fourth finding concerns the contribution of active learning to students' learning interest. Three manifestations were identified: increased enthusiasm for learning, greater involvement in learning activities, and a stronger desire to understand learning materials. The teacher perceived a noticeable change in students' participation:

*"What I see now is that the children are more confident. They ask questions more often, are willing to answer questions, and during discussions they share their opinions. Compared with before, the classroom is more lively because the students are involved in the learning process." (G1)*

Students' willingness to seek understanding was also evident. They did not simply wait for explanations from the teacher but sought clarification through questions and peer interaction. This was particularly visible in S3's account that discussion and practical activities helped make the material easier to understand.

The findings therefore suggest that learning interest was manifested through enthusiasm, participation, and an active desire to understand rather than through verbal expressions of liking alone. Importantly, the data show that these dimensions were interconnected: students enjoyed varied activities, became more involved, found the material easier to understand, and consequently showed greater willingness to continue participating.

## 4. DISCUSSION

The findings provide a more nuanced explanation of the relationship between active learning and students' learning interest. Rather than demonstrating a simple relationship in which the use of active learning directly increases interest, the study indicates that learning interest develops through the quality of learning experiences created by active participation, interaction, and understanding. In the observed classroom, active learning was implemented through participation in group discussions, varied learning activities, practical experiences, learning media, and two-way communication. These practices positioned students as active participants rather than passive recipients of information. This finding is consistent with the conceptualization of active learning proposed by Bonwell and Eison (1991) and Prince (2004), in which students are directly involved in activities that require them to engage with the learning process. It also corresponds with Chi and Wylie's (2014) argument that meaningful learning depends on the quality of students' cognitive engagement rather than simply on whether students are physically active.

An important contribution of this study is the identification of an experiential process through which active learning contributes to the development of learning interest. The findings suggest a pattern in which varied and participatory learning experiences create opportunities for engagement, interaction facilitates understanding, understanding strengthens students' confidence to participate, and these experiences collectively support the development of learning interest. This interpretation should not be regarded as a tested causal model, but as an interpretive synthesis derived from the qualitative data. Previous research has established the positive contribution of active learning to student engagement and learning outcomes (Freeman et al., 2014; Michael, 2006; Munna & Kalam, 2021). The present study extends this understanding by explaining what students experienced within the classroom that made active learning meaningful for them. The students did not simply report that they were more active; they described learning as more enjoyable, easier to understand, and more conducive to participation. Thus, the contribution of active learning appears to lie in the quality of the experience generated through participation.

The findings further indicate that understanding functions as an important link between active learning and learning interest. Students repeatedly associated group discussion, practical activities, and interaction with peers with greater ease in understanding learning materials. For example, students explained that learning with peers allowed them to receive explanations from classmates when they encountered difficulties, while practical activities helped them understand concepts more easily. This finding is theoretically consistent with constructivist perspectives, which emphasize that learners actively construct knowledge through experience and interaction (Piaget, 1972; Fosnot, 2013). It is also compatible with Bruner's (1961a, 1961b) emphasis on active discovery and Vygotsky's (1978) view of learning as a socially mediated process. However, the present study adds an experiential interpretation: students appeared to develop stronger willingness to participate when active activities enabled them to experience a sense of understanding. In this sense, enjoyment alone does not sufficiently explain the development of learning interest; enjoyment becomes educationally meaningful when it is accompanied by perceived understanding and progress.

Social interaction also emerged as more than a teaching technique. Group discussion, peer assistance, and teacher feedback created a social environment in which students could ask questions, test their understanding, and receive assistance without having to rely exclusively on the teacher. This finding supports Vygotsky's (1978) emphasis on interaction and assistance in cognitive development and is consistent with Johnson and Johnson's (2009) perspective on cooperation in learning. The findings suggest that interaction contributed to students' confidence because it provided accessible sources of support during learning. Students reported that they were increasingly willing to ask questions and

answer the teacher because their questions were listened to and they could also seek assistance from classmates. Thus, active learning appears to strengthen students' participation partly by transforming the classroom into a social learning environment in which seeking help and expressing ideas become normal parts of learning.

Another important implication concerns the relationship between participation and classroom management. The findings reveal a productive tension: the same activities that encouraged students to participate could also make the classroom noisy and less conducive to learning. The teacher acknowledged that discussion and practical activities sometimes made the classroom difficult to control, while students reported that excessive noise could make it difficult to hear explanations from the teacher or their peers. This finding challenges an overly idealized view of active learning as inherently beneficial. More activity does not necessarily mean better learning. Participation needs to remain pedagogically meaningful and sufficiently structured so that interaction supports rather than interferes with learning. Consequently, teacher facilitation remains central to active learning. The teacher must provide students with freedom to interact while simultaneously regulating classroom conditions, managing transitions, and responding to differences in students' learning abilities.

Taken together, the findings suggest that the relationship between active learning and learning interest is better conceptualized as an experience-based process rather than a direct instructional effect. The contribution of active learning emerges when students are given meaningful opportunities to participate, interact, experience learning directly, and construct understanding. These experiences can generate positive affect, strengthen confidence, and encourage students to remain involved in learning. This interpretation is broadly consistent with the literature on active learning and student engagement (Bonwell & Eison, 1991; Chi & Wylie, 2014; Freeman et al., 2014; Prince, 2004), but it provides a more contextual explanation of how these processes are experienced by elementary students.

The principal novelty of this study therefore does not lie in proposing a new active learning model. Instead, it lies in explaining the experiential pathway through which active learning may contribute to the development of learning interest in an elementary classroom. The qualitative evidence suggests that participation becomes meaningful through interaction, interaction supports understanding, understanding strengthens confidence, and these accumulated experiences encourage students to remain interested and involved in learning. The study consequently shifts the discussion from the question of whether active learning is effective toward the more specific question of why and through what classroom experiences active learning becomes meaningful to students. In this sense, the study contributes a contextual, process-oriented understanding of active learning in elementary education: active learning is most meaningful when it enables students not merely to *do more*, but to participate, understand, interact, and develop a willingness to continue learning.

## 4. CONCLUSION

The This study examined the implementation of active learning and its contribution to the development of learning interest among Grade 4 students at SD Negeri 011 Bangun Purba. The findings show that active learning was implemented through participatory learning, varied learning activities and media, and interactive communication between teachers and students. These practices provided students with opportunities to discuss, collaborate, ask questions, express opinions, conduct practical activities, and engage directly with learning materials.

The study further found that students experienced active learning as more enjoyable and meaningful. They reported that discussion, group work, practical activities, and varied learning media helped them understand learning materials more easily and increased their confidence to participate. However, the implementation was not without challenges. Classroom noise and differences in students' learning abilities required the teacher to continuously manage classroom interactions and provide differentiated support.

The main contribution of this study is its explanation of how active learning may contribute to the development of learning interest through students' learning experiences. Rather than suggesting a direct causal effect, the findings indicate an experiential pathway in which participatory and varied learning experiences facilitate interaction and understanding, which in turn strengthen students' confidence and willingness to participate. These accumulated experiences are associated with the development of learning interest. Thus, the value of active learning lies not merely in making students more active, but in creating learning experiences that enable them to participate, interact, understand, and develop a willingness to continue learning.

Given the qualitative case study design and the limited number of informants, the findings should be interpreted within the context of the classroom studied rather than generalized statistically to all elementary schools. Future research could examine this experiential pathway across different schools and student populations and investigate it through longitudinal or mixed-method designs.

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**REFERENCES**

Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom*. George Washington University.

Bruner, J. S. (1961a). The act of discovery. *Harvard Educational Review, 31*(1), 21–32.

Bruner, J. S. (1961b). *The process of education*. Harvard University Press.

Chi, M. T. H., & Wylie, R. (2014). The ICAP framework: Linking cognitive engagement to active learning outcomes. *Educational Psychologist, 49*(4), 219–243. https://doi.org/10.1080/00461520.2014.965823

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97–140. https://doi.org/10.1080/10888691.2018.1537791

Dewey, J. (1938). *Experience and education*. Macmillan Company.

Fiorella, L., & Mayer, R. E. (2016). *Learning as a generative activity: Eight learning strategies that promote understanding*. Cambridge University Press.

Fosnot, C. T. (2013). *Constructivism: Theory, perspectives, and practice* (2nd ed.). Teachers College Press.

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., &

Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences, 111*(23), 8410–8415. https://doi.org/10.1073/pnas.1319030111

Johnson, D. W., & Johnson, R. T. (2009). An educational psychology success story: Social interdependence theory and cooperative learning. *Educational Researcher, 38*(5), 365–379. https://doi.org/10.3102/0013189X09339057

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications.

Liu, Q., Wang, M., & Zhang, Y. (2023). Learning interest and academic achievement among primary school students: A longitudinal study. *Learning and Individual Differences, 105*, 102315.

Michael, J. (2006). Where's the evidence that active learning works? *Advances in Physiology Education, 30*(4), 159–167. https://doi.org/10.1152/advan.00053.2006

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE Publications.

Munna, A. S., & Kalam, M. A. (2021). Impact of active learning strategy on the student engagement. *GNOSI: An Interdisciplinary Journal of Human Theory and Praxis, 4*(2), 96–114.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods, 16*(1), 1–13. https://doi.org/10.1177/1609406917733847

Nurhasanah, S., & Sobandi, A. (2021). Minat belajar sebagai determinan keberhasilan belajar siswa sekolah dasar. *Jurnal Pendidikan Dasar Indonesia, 6*(2), 105–118. https://doi.org/10.17509/jpm.v1i1.3264

Patton, M. Q. (2015). *Qualitative research & evaluation methods* (4th ed.). SAGE Publications.

Piaget, J. (1972). *The psychology of the child*. Basic Books.

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education, 93*(3), 223–231. https://doi.org/10.1002/j.2168-9830.2004.tb00809.x

Schiefele, U., Krapp, A., & Winteler, A. (1992). Interest as a predictor of academic achievement: A meta-analysis. *Educational Psychologist, 57*(2), 89–110.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63–75. https://doi.org/10.3233/EFI-2004-22201

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.